CLAIMS

What is claimed is:

1. A method for measuring long-term arrival rates of data samples on an asynchronous transport network, the method comprising the steps of:

counting a known and predetermined number of data samples in a session;

measuring a time interval between the arrival of a first data sample and the arrival of a last data sample in said session; and

calculating a long-term average arrival rate of said data samples by dividing said known and predetermined number of data samples by said measured time interval of said session.

2. The method of Claim 1 wherein the data samples are contained within a plurality of data packets.

3. The method of Claim 1 wherein said session is a session with the largest number of said data samples in a set of sessions.

4. A method for synchronizing a first clock rate of a network clock to a second clock rate of a receiver clock on an asynchronous transport network, the method comprising the steps of:

counting a known and predetermined number of data samples in a session;

measuring a time interval between the arrival of a first data sample and the arrival of a last data sample in said session;

calculating a long-term average arrival rate of said data samples by dividing said known and predetermined number of data samples by said measured time interval of said session;

counting clock pulses output from said receiver clock to determine a value for said second clock rate;

calculating a clock rate error variable, said variable being equal to the difference between said calculated long-term average arrival rate and said second clock rate of said receiver clock; and

adjusting said second clock rate of said receiver clock by an amount equal to said clock rate error variable.

5. The method of Claim 4 wherein the data samples are contained within a plurality of data packets.

6. The method of Claim 4 wherein said session is a session with the largest number of said data samples in a set of sessions.

7. The method of Claim 4 wherein said long-term average arrival rate is an average rate of a number of different sessions.

8. The method of Claim 4 wherein said long-term average arrival rate is a time-weighted average of previous sessions.

9. The method of Claim 4 wherein the step of adjusting said second clock rate, having a frequency R, comprises dividing down said frequency R of said second clock rate by a factor Z, such that said adjusted second clock rate is R/Z.

10. A system for measuring long-term arrival rates of data samples on an asynchronous transport network, the system comprising:

means for counting a known and predetermined number of data samples in a session;

means for measuring a time interval between the arrival of a first data sample and the arrival of a last data sample in said session; and

means for calculating a long-term average arrival rate of said data samples by dividing said known and predetermined number of data samples by said measured time interval of said session.

11. The system of Claim 10 wherein the data samples are contained within a plurality of data packets.

12. The system of Claim 10 wherein said session is a session with the largest number of said data samples in a set of sessions.

13. A system for synchronizing a first clock rate of a network clock to a second clock rate of a receiver clock on an asynchronous transport network, the system comprising:

means for counting a known and predetermined number of data samples in a session;

means for measuring a time interval between the arrival of a first data sample and the arrival of a last data sample in said session;

means for calculating a long-term average arrival rate of said data samples by dividing said known and predetermined number of data samples by said measured time interval of said session;

means for counting clock pulses output from said receiver clock to determine a value for said second clock rate;

means for calculating a clock rate error variable, said variable being equal to the difference between said calculated long-term average arrival rate and said second clock rate of said receiver clock; and

means for adjusting said second clock rate of said receiver clock by an amount equal to said clock rate error variable.

14. The system of Claim 13 wherein the data samples are contained within a plurality of data packets.

15. The system of Claim 13 wherein said session is a session with the largest number of said data samples in a set of sessions.

16. The system of Claim 13 wherein said long-term average arrival rate is an average rate of a number of different sessions.

17. The system of Claim 13 wherein said long-term average arrival rate is a time-weighted average of previous sessions.

18. The system of Claim 13 wherein the step of adjusting said second clock rate, having a frequency R, comprises dividing down said frequency R of said second clock rate by a factor Z, such that said adjusted second clock rate is R/Z.

19. A machine-readable medium having embodied thereon a program, said program being executable by an electronic device to perform method steps for measuring and calculating long-term arrival rates of data samples on an asynchronous transport network, the method steps comprising:

counting a known and predetermined number of data samples in a session;

measuring a time interval between the arrival of a first data sample and the arrival of a last data sample in said session; and

calculating a long-term average arrival rate of said data samples by dividing said known and predetermined number of data samples by said measured time interval of said session.

20. The machine-readable medium of Claim 19 wherein the data samples are contained within a plurality of data packets.

21. The machine-readable medium of Claim 19 wherein said session is a session with the largest number of said data samples in a set of sessions.

22. A machine-readable medium having embodied thereon a program, said program being executable by an electronic device to perform method steps for synchronizing a first clock rate of a network clock to a second clock rate of a receiver clock on an asynchronous transport network, the method steps comprising:

counting a known and predetermined number of data samples in a session;

measuring a time interval between the arrival of a first data sample and the arrival of a last data sample in said session;

calculating a long-term average arrival rate of said data samples by dividing said known and predetermined number of data samples by said measured time interval of said session;

counting clock pulses output from said receiver clock to determine a value for said second clock rate;

calculating a clock rate error variable, said variable being equal to the difference between said calculated long-term average arrival rate and said second clock rate of said receiver clock; and

adjusting said second clock rate of said receiver clock by an amount equal to said clock rate error variable.

23. The machine-readable medium of Claim 22 wherein the data samples are contained within a plurality of data packets.

24. The machine-readable medium of Claim 22 wherein said session is a session with the largest number of said data samples in a set of sessions.

25. The machine-readable medium of Claim 22 wherein said long-term average arrival rate is an average rate of a number of different sessions.

26. The machine-readable medium of Claim 22 wherein said long-term average arrival rate is a time-weighted average of previous sessions.

27. The machine-readable medium of Claim 22 wherein the step of adjusting said second clock rate, having a frequency R, comprises dividing down said frequency R of said second clock rate by a factor Z, such that said adjusted second clock rate is R/Z.